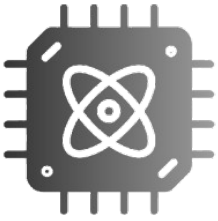
Load Test Report

Pizza Test

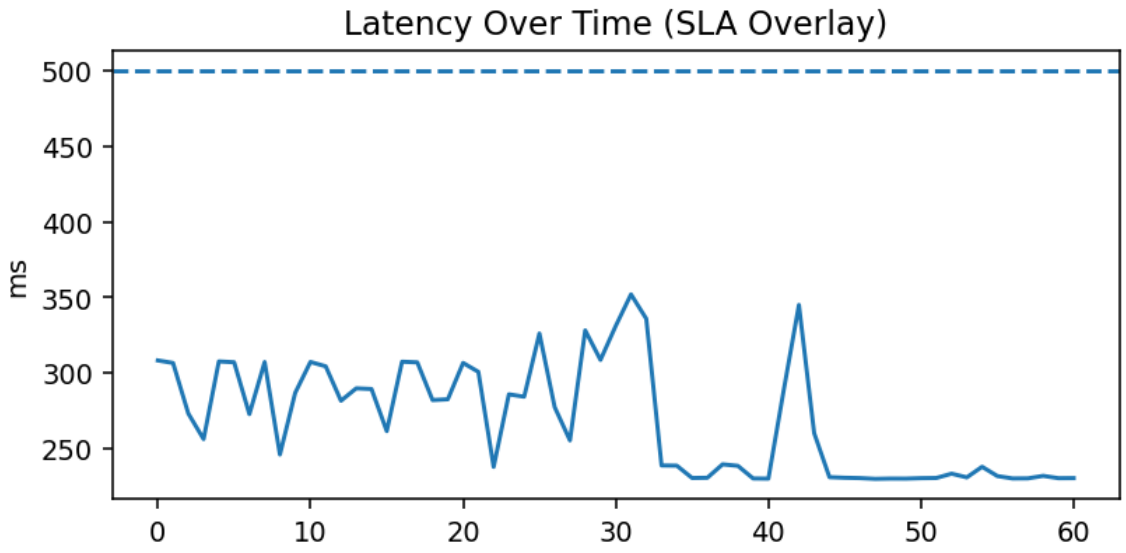
https://quickpizza.grafana.com/

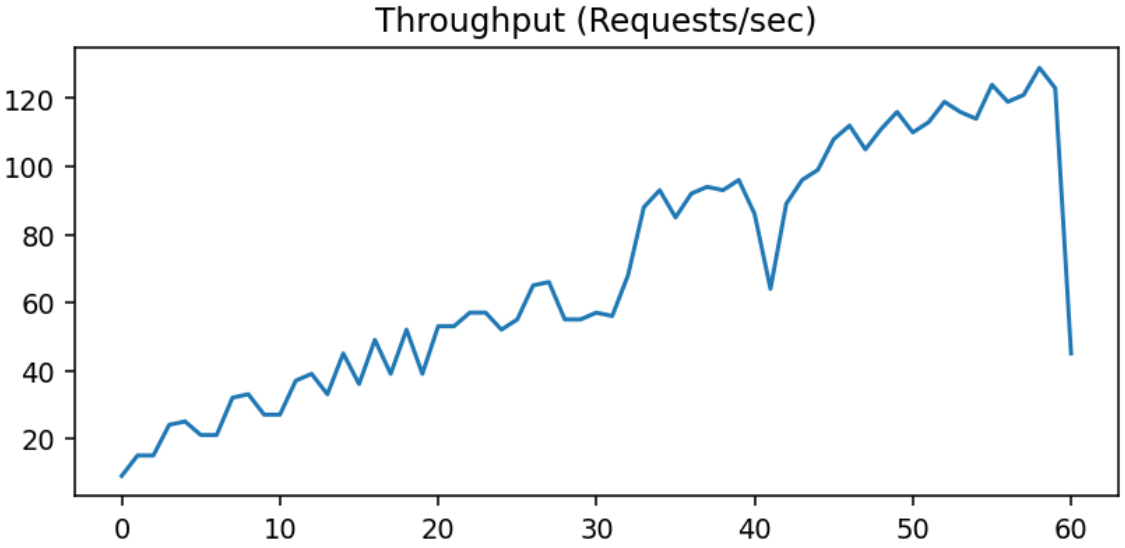
Generated on February 05, 2026 • 14:41

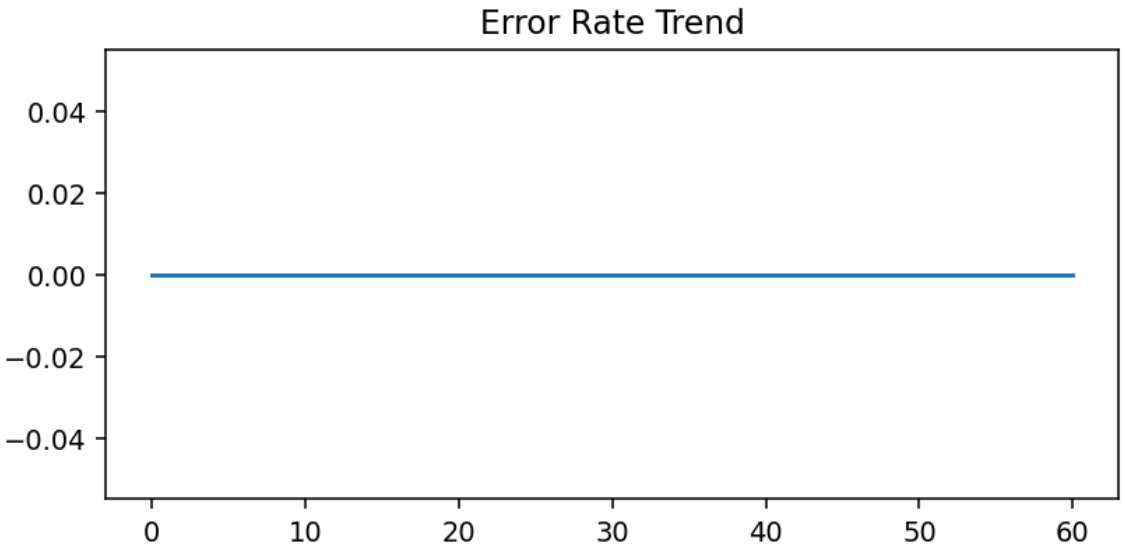


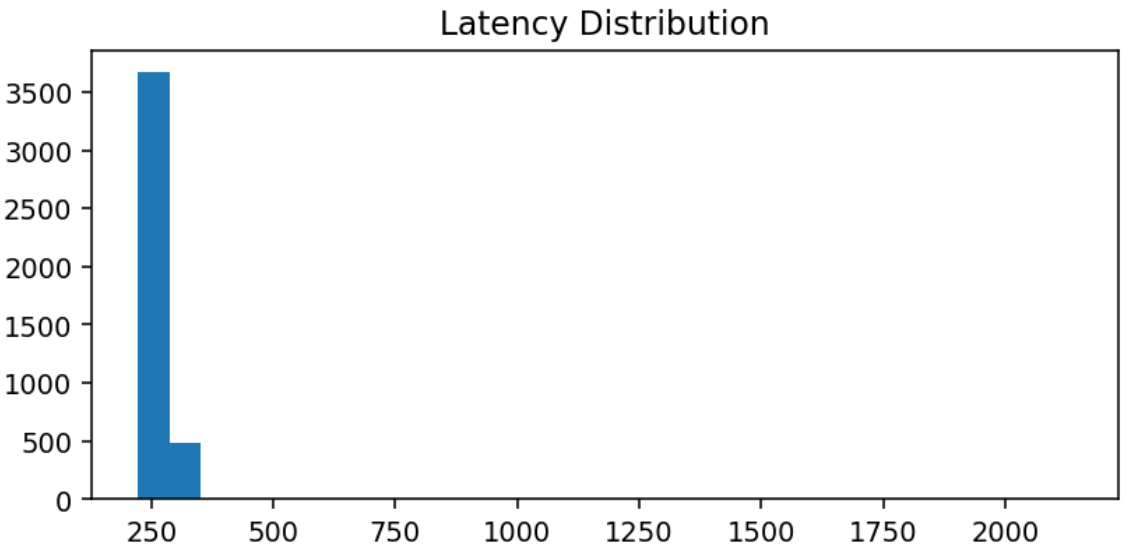
K6 Ai Powered

Performance Dashboard






Error Rate Trend
0.04
0.02
0.00
−0.02
−0.04
0
10
20
30
40
50
60


Latency Distribution
3500
3000
2500
2000
1500
1000
500
0
250
500
750
1000
1250
1500
1750
2000

Executive Scorecard

Performance Score	100
SLA Grade	A
Risk Level	Low

Performance Metrics

Avg (ms)	256.47
P95 (ms)	308.03
P99 (ms)	1078.17
Requests/sec	70.45
Error Rate	0.0

Security Header Recap

Score	0/6
Grade	F
Target	https://quickpizza.grafana.com/
Status	Ready
Top Recommendations	Add Content Security Policy, Add Permissions Policy, Add Referrer Policy, Add Strict Transport Security, Add X Content Type Options, Add X Frame Options

Header	Status
content-security-policy	missing
permissions-policy	missing
referrer-policy	missing
strict-transport-security	missing
x-content-type-options	missing
x-frame-options	missing

Raw Headers

Header	Value
date	Thu, 05 Feb 2026 14:39:55 GMT
content-type	text/html; charset=utf-8
content-length	2753
connection	keep-alive
set-cookie	AWSALB=BH2LrE7qmUS4vcFFjimqMMTHNIpgSekVh92gTK2CZc6qmiSZ0HKqEfm9s5K7vpvGZ/4AFuhUBF4ITIDPjHuMFFbvQEdQ8zFDaWsMZQR7vNQkV0Tw6Yu/TFrlvZB/; Expires=Thu, 12 Feb 2026 14:39:55 GMT; Path=/, AWSALBCORS=BH2LrE7qmUS4vcFFjimqMMTHNIpgSekVh92gTK2CZc6qmiSZ0HKqEfm9s5K7vpvGZ/4AFuhUBF4ITIDPjHuMFFbvQEdQ8zFDaWsMZQR7vNQkV0Tw6Yu/TFrlvZB/; Expires=Thu, 12 Feb 2026 14:39:55 GMT; Path=/; SameSite=None; Secure
accept-ranges	bytes

vary	Origin

SSL / TLS Analysis

Status	PASS
Rating	A+
Score	100
Protocol Score	100
Key Exchange Score	100
Cipher Strength Score	100
Supported	TLS 1.3, TLS 1.2
Weak Protocols	-
Negotiated Ciphers	TLS_AES_128_GCM_SHA256, ECDHE-RSA-AES128-GCM-SHA256
Key	RSA 2048
Cert expires (days)	114
Cert Subject	CN=grafana.com,O=Raintank Inc.,L=New York,ST=New York,C=US
Cert Issuer	CN=DigiCert Global G2 TLS RSA SHA256 2020 CA1,O=DigiCert Inc,C=US
Valid From	2025-04-29T00:00:00+00:00
Valid To	2026-05-30T23:59:59+00:00

WebPageTest (Playwright)

Status	OK
Agent	k6-ai-powerd-agent
Score	75
Grade	D
Network	Simulated Fast3G
Latency (ms)	150
Download (B/s)	200000
Upload (B/s)	93750

CPU Throttle	4

TTFB (s)	4.834
FCP (s)	7.724
LCP (s)	7.724
CLS	0
Start Render (s)	5.08
Speed Index (s)	7.724
TBT (s)	0.0
Page Weight (KB)	482.9
Total Requests	22
DC Time (s)	5.08
DC Bytes (KB)	2.69
Total Time (s)	5.08
Elapsed (s)	10.093

First View (Cold Cache)

TTFB (ms)	4833.79999999702
DOMContentLoaded (ms)	5079.79999999702
Load Event (ms)	5079.79999999702
First Paint (ms)	5080
FCP (ms)	7724
Elapsed (ms)	10093.01693499583

LCP (ms)	7724
CLS	0
INP (ms)	-

Resources	22
Transfer (KB)	482.9
Encoded (KB)	476.45

Top Resources (by order)

Resource	Initiator	Start (ms)	Duration (ms)	Transfer (KB)
https://quickpizza.grafana.com/_app/immutable/assets/0.BT5vwha0.css	link	4838.4	237.9	15.54
https://quickpizza.grafana.com/_app/immutable/entry/start.COLIPM_-.js	other	4838.6	1019.1	0.37
https://quickpizza.grafana.com/_app/immutable/chunks/uWbUvUDx.js	other	4838.7	1018.8	4.89
https://quickpizza.grafana.com/_app/immutable/chunks/BlOs-xoe.js	other	4838.7	1018.7	31.15
https://quickpizza.grafana.com/_app/immutable/chunks/Bp10ps_z.js	other	4838.8	465.3	21.63
https://quickpizza.grafana.com/_app/immutable/chunks/WXzZokYn.js	other	4838.8	1019.1	0.73
https://quickpizza.grafana.com/_app/immutable/chunks/BnKclGOK.js	other	4838.9	1018.9	2.31
https://quickpizza.grafana.com/_app/immutable/entry/app.cpKoTD_G.js	other	4838.9	2247.2	350.27
https://quickpizza.grafana.com/_app/immutable/chunks/DsnmJJEf.js	other	4839	1018.6	0.36
https://quickpizza.grafana.com/_app/immutable/chunks/BMutstfH.js	other	4839.1	1018.9	1.24
https://quickpizza.grafana.com/_app/immutable/nodes/0.BdomnpSP.js	other	4839.1	1019.1	0.82
https://quickpizza.grafana.com/_app/immutable/chunks/DVyCz4NY.js	other	4839.1	1019.2	0.33

Repeat View (Warm Cache)

TTFB (ms)	252.79999999701977
DOMContentLoaded (ms)	562.2999999970198
Load Event (ms)	562.5
First Paint (ms)	564
FCP (ms)	3032
Elapsed (ms)	5334.498445001373

LCP (ms)	3032
CLS	0
INP (ms)	-

Resources	22
Transfer (KB)	482.9
Encoded (KB)	476.45

Top Resources (by order)

Resource	Initiator	Start (ms)	Duration (ms)	Transfer (KB)
https://quickpizza.grafana.com/_app/immutable/assets/0.BT5vwha0.css	link	255.9	303.4	15.54
https://quickpizza.grafana.com/_app/immutable/entry/start.COLIPM_-.js	other	256	303.7	0.37
https://quickpizza.grafana.com/_app/immutable/chunks/uWbUvUDx.js	other	256.1	304.6	4.89
https://quickpizza.grafana.com/_app/immutable/chunks/BlOs-xoe.js	other	256.1	305.6	31.15
https://quickpizza.grafana.com/_app/immutable/chunks/Bp10ps_z.js	other	256.1	306.3	21.63
https://quickpizza.grafana.com/_app/immutable/chunks/WXzZokYn.js	other	256.1	1019.8	0.73
https://quickpizza.grafana.com/_app/immutable/chunks/BnKclGOK.js	other	256.2	768.9	2.31
https://quickpizza.grafana.com/_app/immutable/entry/app.cpKoTD_G.js	other	256.2	2149.7	350.27
https://quickpizza.grafana.com/_app/immutable/chunks/DsnmJJEf.js	other	256.3	1020.2	0.36
https://quickpizza.grafana.com/_app/immutable/nodes/0.BdomnpSP.js	other	256.3	2149.7	0.82
https://quickpizza.grafana.com/_app/immutable/chunks/BMutstfH.js	other	256.3	2149.7	1.24

https://quickpizza.grafana.com/_app/immutable/chunks/DVyCz4NY.js	other	256.4	2149.8	0.33

Lighthouse

Status	OK
Score	72
Grade	D

Category	Score
Performance	72
Accessibility	93
Best Practices	96
SEO	91
PWA	0

Key Metrics

Metric	Value
FCP	3.6 s
LCP	3.8 s
CLS	0
TBT	10 ms
TTI	3.9 s
Speed Index	14.2 s

AI Engineering Analysis

Performance and Security Analysis Report - QuickPizza Grafana Dashboard

Date: 2026-02-05

1) Executive Summary

This report analyzes the performance and security posture of the QuickPizza Grafana dashboard. While the load testing indicates a generally stable system with a high success rate (100%) and a low error rate (0.0%), the user experience and security present significant areas for improvement. The WebPageTest (WPT) score of 75 (Grade D) and Lighthouse performance score of 72 (Grade D) highlight substantial frontend performance issues, particularly impacting initial load times. The security headers grade of F indicates a critical lack of essential security configurations. Addressing these issues is paramount to improving user satisfaction, reducing security risks, and ensuring service reliability.

2) Bottlenecks and Root Causes

Performance Bottlenecks:

• High TTFB (Time to First Byte):

• Root Cause: WebPageTest shows a TTFB of 4833.8ms for the first view, which is exceptionally high. This suggests significant server-side processing delays or network latency before the initial HTML document is delivered. The k6 load test also shows an average HTTP request duration of 256.5ms and a p95 of 308ms, indicating that even under load, individual requests are not instantaneous. The

timeline data shows frequent spikes in latency, with some requests exceeding 1000ms and even reaching over 2000ms, indicating intermittent server-side issues or network congestion.

• Slow First Contentful Paint (FCP) and Largest Contentful Paint (LCP):

• Root Cause: WPT reports FCP and LCP at 7724ms for the first view. Lighthouse also indicates LCP at 3.8s. This is a direct consequence of the high TTFB and potentially large, unoptimized frontend assets being downloaded and rendered.

• High Initial Load Time:

• Root Cause: The total_time_ms in WPT's first view summary is 10093ms, indicating that users will experience a significant delay before the dashboard is usable on their first visit.

• Large Page Weight:

• Root Cause: WPT reports a page_weight_kb of 482.9KB. While not excessively large, combined with other factors, it contributes to slower load times. The waterfall shows numerous JavaScript and CSS files being loaded.

Network Bottlenecks:

• Intermittent Latency Spikes: The k6 timeline data clearly shows significant latency spikes, with some requests taking over 1000ms and peaking at 2136ms. This indicates potential network instability, server overload, or inefficient resource allocation during the load test.

Frontend Bottlenecks:

• Large JavaScript Bundles: The WPT waterfall shows the loading of several large JavaScript files (e.g., app.cpKoTD_G.js at 358KB). These are likely contributing to the slow FCP and LCP.

• Unoptimized Asset Loading: The waterfall indicates that many assets are loaded sequentially, rather than in parallel or with appropriate prioritization.

TLS Bottlenecks:

• No identified TLS bottlenecks. The SSL/TLS analysis shows a perfect score (100, A+) with supported modern protocols and strong ciphers.

Security Headers Bottlenecks:

• Critical Missing Security Headers: The security headers scan returned an F grade, indicating a complete absence of essential security headers like Content-Security-Policy, Strict-Transport-Security, X-Content-Type-Options, X-Frame-Options, Permissions-Policy, and Referrer-Policy.

3) Risks

• User Experience Degradation (High Severity):

• Risk: The extremely high TTFB and LCP on initial load will lead to significant user frustration, abandonment, and a perception of poor application quality. This directly impacts user satisfaction and adoption.

• Service Level Agreement (SLA) Violations (Medium Severity):

• Risk: If performance targets are part of SLAs, the current TTFB and load times could lead to breaches. The intermittent latency spikes observed in k6 testing also pose a risk to consistent service availability.

• Security Vulnerabilities (High Severity):

• Risk: The complete lack of security headers exposes the application to various attacks, including Cross-Site Scripting (XSS), clickjacking, and insecure content

loading. This significantly increases the attack surface.

- Increased Operational Costs (Low Severity):

• Risk: While not directly evident, poor performance can sometimes lead to inefficient resource utilization, potentially increasing infrastructure costs if not addressed.

4) Prioritized Recommendations

Immediate Actions (High Priority):

- Investigate and Optimize TTFB:
- Analyze server-side application code for performance bottlenecks.
- Optimize database queries and caching strategies.
- Review and optimize API response times.
- Consider server-side caching mechanisms.
- Implement Essential Security Headers:
- Add Content-Security-Policy to mitigate XSS attacks.
- Implement Strict-Transport-Security (HSTS) to enforce HTTPS.
- Add X-Content-Type-Options: nosniff to prevent MIME-sniffing attacks.
- Add X-Frame-Options: DENY or SAMEORIGIN to prevent clickjacking.
- Configure Referrer-Policy for better privacy control.
- Implement Permissions-Policy to control browser feature access.

Short-Term Actions (Medium Priority):

- Optimize Frontend Asset Loading:
- Code-split JavaScript bundles to load only necessary code.
- Implement lazy loading for non-critical assets.
- Optimize image formats and compression (e.g., pizza.png in WPT waterfall).
- Consider prefetching or preloading critical resources.
- Review and Optimize JavaScript Execution:
- Analyze Lighthouse's "Total Blocking Time" (currently 10ms, but could increase with more complex interactions) and identify long-running JavaScript tasks.
- Minimize third-party script impact.

Long-Term Actions (Low Priority):

- Continuous Performance Monitoring: Integrate performance monitoring into the CI/CD pipeline to catch regressions early.
- User-Centric Performance Metrics: Focus on metrics like INP (Interactive) if it becomes available and relevant for the dashboard's interactivity.

5) Scaling/Operational Guidance

- Load Profile: The k6 test indicates a load of approximately 70 requests per second. The system appears to handle this load with a 100% success rate, but the p95 duration of 308ms and the observed latency spikes suggest that the system is operating at or near its capacity for optimal user experience.

• Headroom: There is limited headroom for handling increased traffic or more complex user interactions without performance degradation. The high TTFB and intermittent latency spikes are critical indicators of potential scalability issues under sustained or increased load.

• Operational Considerations:

• Proactive Monitoring: Implement robust monitoring for TTFB, request latency, and error rates. Set up alerts for deviations from baseline performance.

• Capacity Planning: Based on the current load and performance metrics, plan for scaling infrastructure (e.g., web servers, application servers, database) if traffic is expected to grow.

• Incident Response: Have a clear incident response plan for performance degradation or availability issues, with clear escalation paths.

• Security Patching: Regularly review and apply security patches to all components of the infrastructure.

Note: The WebPageTest results were obtained using a simulated "Fast 3G" network profile with 150ms latency. Real-world performance may vary significantly depending on actual network conditions. The Lighthouse results also indicate a "speed-index" of 14.2s, which is a significant concern for user perception of speed.